

REMARKS

Claims 1-4, and 8-56 are pending in the application. Claims 5-7 have been cancelled. Applicants respectfully request reconsideration of the Application.

Claim 1 has been amended to recite that the at least one additional metal is chosen from an alkaline earth metal, boron, iron, tin, zinc, or a mixture of two or more thereof, with the proviso that when the additional metal salt is a zinc phosphate it is a zinc phosphate octahydrate. Support for this amendment may be found, for example, in original claim 7 and the specification at page 10, lines 14-20 and page 28, lines 9 and 18.

Elections/Restrictions

The Examiner has restricted the claims in the present application under 35 U.S.C. §121 as follows:

Invention I. Claims 1 to 27, drawn to a method of coating, classified in class 427, subclass 383.1.

Invention II. Claims 28 to 54, drawn to a coating composition, classified in class 106, subclass 14.05.

Invention III. Claims 55 and 56, drawn to a carbon-carbon composite treated with a coating composition, classified in class 428, subclass 471.

The undersigned attorney, on behalf of the Applicants, provisionally elected Invention I including claims 1 to 27 during a telephone conversation on January 18, 2008 with the Examiner. Applicants affirm the election of Invention I, claims 1-27.

Rejections Under 35 U.S.C. § 102

Claims 1-7, 14-23, and 25-26 have been rejected under 35 U.S.C. §102(b) as being anticipated by Stover (U.S. Patent 5,759,622). Applicants respectfully traverse this rejection.

The '622 patent discloses a composition comprising (a) phosphoric acid, (b) (i) a metal phosphate or (ii) a combination of a zinc salt and an aluminum salt, and (c) a wetting agent. The '622 patent discloses manganese, zinc, and aluminum phosphates as suitable phosphates.

As discussed above, independent claim 1 has been amended to recite that the additional metal is chosen from an alkaline earth metal, boron, iron, tin, zinc or a mixture of two or more thereof, with the proviso that when the additional metal salt is a zinc phosphate it is zinc phosphate octahydrate. The '622 patent does not disclose a composition that includes one or more of these metals in combination with aluminum. Thus, the '622 patent does not teach every feature of amended claim 1. Consequently, the '622 patent does not anticipate claim 1 claims 2-7, 14-23, and 25-26, which depend from claim 1. Applicants respectfully request that the rejections under 35 U.S.C. § 102(b) be withdrawn.

Rejections Under 35 U.S.C. § 103

Claim 27 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Stover. Applicants respectfully traverse this rejection.

As described above, the '622 patent does not teach or suggest the oxidation inhibiting composition recited in amended claim 1. Claim 27 depends from claim 1. Therefore, the '622 patent does not teach or suggest the all the features of claim 27. Further, the '622 patent provides no teaching of adjusting the metal to phosphate ratio by adding a metal nitrate or metal salt as specified in claim 27. Applicants respectfully request that the rejection of claim 27 be withdrawn.

Claims 8-13 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Stover in view of Block (U.S. Patent 4,454,193). The Examiner contends Block teaches that zinc and magnesium are preferred multi-valent cations, which are especially resistant to oxidation at elevated temperatures, and that it would be obvious to modify Stover with magnesium salts. Applicants respectfully traverse this rejection.

While this rejection applies to claims 8-13, Applicants discuss the rejection also in terms of claim 1, which has been amended herein to recite that the additional metal may comprise a salt of an alkaline earth metal, boron, iron, tin, zinc, or a mixture of two or more thereof, with the proviso that when the additional metal salt is a zinc phosphate it is zinc phosphate octahydrate.

Block is directed to a carbon/metal phosphate composite that is made by contacting a carbon body with a solution comprising a nonionic organophosphorous ester and a metal

salt to coat the internal and external surfaces of the carbon body. Block describes the metal coating as a metal metaphosphate that is the reaction product of the nonionic organophosphorous ester and the metal salt. Block discloses that the metal salt may be any salt that forms a refractory metaphosphate and that the metal may be a multi-valent metal cation selected from groups IB, IIA, IIB, IIIB, VIA, and VIII of the periodic table.

Block teaches, however, that compositions formed from phosphoric acids or phosphate salts are undesirable and pose several problems for use as impregnants for carbon bodies. For example, Block teaches that impregnants formed from phosphoric acids or metal salts are difficult to synthesize consistently due to incomplete reaction between the metal salt and the phosphate, which results in large amounts of excess metal salt in the impregnant product. (Column 1, lines 37-41.) Block teaches that its solution is non-ionic and that the organophosphorous ester is free of acid groups or the corresponding salts thereof. (Column 4, lines 50-51.) This is to avoid the problems of high viscosity of the impregnating solution and the non-uniform composition of the resulting composite found in compositions that contain phosphoric acid or phosphates. (Column 4, lines 46-50.)

In view of this, a person skilled in the art would not modify Stover with Block. Stover does not teach a composition with aluminum and at least one additional metal selected from alkaline earth metal, born, iron, tin, or mixtures of two or more thereof. Despite Block teaching that its compositions may use metals from several different groups in the periodic table (including magnesium), Block teaches away from compositions combining metal cations (or their salts) with phosphorous acid and/or metal phosphates.

There is also no suggestion in Block to combine the recited additional metals with aluminum. Block teaches that aluminum salts are not very effective and are not preferred. (Column 7, lines 43-45.) Thus, Block also appears to teach away from aluminum salts. Consequently, a person skilled in the art would not combine aluminum salt with the other salts disclosed in Block.

Considering the references as a whole, a person skilled in the art would not simply choose from the metals disclosed by Block and use those in Stover's composition, which includes phosphorous acid and/or metal phosphates. Rather, it is only through hindsight that a person skilled in the art would modify Stover with Block. Applicants request that the rejections under 35 U.S.C. § 103(a) based on Stover in view of Block be withdrawn.

The Examiner rejected claim 24 under 35 U.S.C. § 103(a) as being unpatentable over Stover in view of U.S. Patent No. 4,425,407 to Galasso et al. The Examiner contends that Galasso et al. teaches contacting a carbon-carbon composite material with molten silicon and modify Stover with Galasso would have been obvious because Galasso teaches that such a method is well known in the art. Applicants respectfully traverse this rejection.

As described above, Stover does not teach or suggest all the features of claim 1. Claim 24 depends from claim 1. Galasso does not make up for material that is not found in Stover. Therefore, claim 24 is not obvious in view of Stover in combination with Galasso. Further, for the reasons described above with respect to the combination of Stover and Block, claim 24 is not obvious even if Stover and Block were modified by Galasso. Applicants respectfully request that the rejection be withdrawn.

CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully submit that the application is in condition for allowance. A notice of allowance is respectfully requested.

In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to our Deposit Account No. 18-0988 under Attorney Docket No. GRCBP0317USA.

Respectfully submitted,

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